REMARKS

Claims 1-14 are pending. By this Response claims 1, 5, 9, 10 and 11 are amended. Reconsideration and allowance based on the below comments are respectfully requested.

The Office Action rejects claims 1, 4 and 9 under 35 U.S.C. §103(a) as being unpatentable over applicant's admitted prior art; claims 1, 4, 5, 8, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over Ooi, et al. (US 6,362,913) in view of applicant's admitted prior art; claims 2 and 6 under 35 U.S.C. §103(a) as being unpatentable over Ooi in view of applicant's admitted prior art and Miyamoto, et al. (US 6,559,996); claims 3 and 7 under 35 U.S.C. §103(a) as being unpatentable over Ooi, applicant's admitted prior art and Jabr (US 6,229,632) and claims 11-14 under 35 U.S.C. §103(a) as being unpatentable over Ooi, applicant's admitted prior art and Ishihara (US 5,557,648). These rejections are respectfully traversed.

Regarding the rejection of claims 1, 4 and 9 under 35 U.S.C. §103 in view of applicant's admitted prior art, applicant's note that the Examiner alleges that each and every feature of claims 1, 4 and 9 is explicitly taught by applicant's admitted prior art. Applicants' respectfully submit that this type of rejection would be an anticipation rejection and fall under 35 U.S.C. §102. Further, the Office Action states for motivation that "it would have been obvious to one of ordinary skill in the art at the time of the invention that the claimed apparatus is conventional, as disclosed by the applicant." Applicants respectfully submit that this statement is not a proper motivational statement under 35 U.S.C. §103, since it does not refer to a motivation to combine separate teachings or teachings of the reference with knowledge of one of ordinary skill in the art. Moreover, applicants have not stated anywhere in the disclosure that the "claimed apparatus" is conventional as alleged in the Office Action. Thus, applicants' respectfully submit that his rejection is improper and should be withdrawn.

Although the above-noted rejection is improper, applicants, in the below comments point out the deficiencies of applicant's admitted prior art in relation to the claimed features.

In embodiments of the present invention, an optical transmission apparatus is provided which extracts a frequency component of the driving signal for an optical modulator, generates an error signal of a bias voltage and adds the bias voltages and the voltage corresponding to the generated error signal to obtain the final bias voltage used by the optical modulator. The frequency of the driving signal is (fc) and the frequency of the optical pulse string transmitted is (2fc). An extracting unit extracts the frequency component of (fc) from the output of an optical modulator. The output of the extracting unit is supplied to an error signal generating unit. The error signal generating unit generates an error signal based on the level of the signal extracted. The error signal is then added to a bias signal.

As recognized in the Office Action, neither Ooi, Miyamoto, Jabr nor Ishihara teach the above feature of generating an error signal and adding the bias voltage and the error signal to create the final bias voltage supplied to the optical modulator as described in the embodiments of the present invention. The Office Action alleges, however, that applicant's admitted prior art provides this teaching and is combinable with Ooi to provide applicant's claimed invention as recited in independent claims 1, 5, 9, 10 and 11. Applicants respectfully disagree.

Applicants admitted prior art teaches generating an error signal corresponding to a deviation of the bias voltage from an optimum operation point. A synchronous detector circuit detects the deviation based on a comparison of the phase of the low frequency component included in the output optical signal with the phase of the low frequency signal superimposed with the driving signal. See page5, line 21 to page 9, line 15 of applicants' specification. Nowhere does applicants' admitted prior art teach the use of an extracting unit that extracts the (fc) component from the output of an optical modulator.

Further, Ooi's teachings are similar to applicants' admitted prior art where a low frequency signal with a frequency of f0 is generated at the low frequency signal generator and is superimposed on a driving signal. A low-pass filter or a bandpass filter is then used in order to pass the low frequency signal with the frequency f0.

Neither applicants' admitted prior art and Ooi teach an extracting unit that extracts frequency components nor detecting a level of the frequency component nor generating an error signal generating, as claimed.

Thus, the combination of Ooi and applicant's admitted prior art fails to teach and every feature of applicant's independent claims 1, 5, 9, 10 and 11. Specifically, Ooi and applicant's admitted prior art fail to teach, or suggest, *inter alia*, an extracting unit connected to the converting unit, the extracting unit extracting the frequency component of the driving signal (fc) included the electric signal converted by said converting unit; and an error signal generating unit which generates an error signal of a bias voltage for minimizing a value of a frequency component of the driving signal (fc) extracted by said extracting unit, as recited in claim 1.

Further, the combination of Ooi and applicant's admitted prior art fails to teach or suggest, *inter alia*, an extracting unit connected to the converting unit, the extracting unit extracting the frequency component two times that of the driving signal (fc) included in the electric signal converted by said converting unit; and an error signal generating unit includes a level detector for detecting a level of the frequency component of the driving signal (fc) and a processing unit for generating an error signal based on the level detected by the level detector, the error signal generating unit generating the error signal of a bias voltage for maximizing a value of the frequency component two times that of the driving signal (fc) extracted by such extracting unit, as recited in claim 5.

The combination of Ooi and applicant's admitted prior art fails to teach or suggest, *inter alia*, receiving a frequency component of the driving signal (fc) ...detecting a level of the frequency component of the driving signal (fc); and generating and error signal of a bias voltage based on the level detected for minimizing a value of the frequency component of the driving signal; and applying the bias voltage obtained as a result of the addition of the bias voltage and the voltage corresponding to the error signal to said optical modulator, as recited in claim 9.

Also, the combination of Ooi and applicant's admitted prior art fails to teach or suggest, *inter alia*, receiving a frequency component of the driving signal (fc) ...detecting a level of the frequency component of the driving signal (fc); and generating and error signal of a bias voltage based on the level detected for maximizing a value of the frequency component two times out of the driving signal; and applying a bias voltage added with the voltage corresponding to the error signal, to said optical modulator, as recited in claim 10.

Finally, the combination of applicant's admitted prior and Ooi fails to teach or suggest, *inter alia*, providing a second signal generator to generate an error signal, the second signal generator including a level detector for detecting a level of the frequency component and a processor for generating an error signal based on the level detected by the level detector, said error signal being generated from the frequency components satisfying a predetermined threshold to generate a digital detection signal which is converted to an analog signal indicating a change in a bias voltage to the input to said optical modulator; providing a controller to generate the bias voltage, said bias voltage being generating from combining said error signal with a predetermined bias voltage, as recited in claim 11.

Further, Miyamoto, Jabr and Ishihara fail to make up for the deficiencies of Ooi and applicants admitted prior art.

In view of the above, applicants respectfully submit that each and every feature of the independent claims is not taught by the combination of references

Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

Conclusion

For at least these reasons, it is respectfully submitted that claims 1-14 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings (Reg. No. 48,917) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

BIRCH, STEWART, KOLASCH & BIRCH, LLP

#40,439

By _____
Michael K. Mutter
Reg. No. 29,680

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

MKM/CJB:cb
2611-0151P

Attachment(s)